



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/595,804	06/16/2000	Eric C. Hannah	INTL-0372-US (P8591)	3494
21906	7590	04/04/2006	EXAMINER	
TROP PRUNER & HU, PC 8554 KATY FREEWAY SUITE 100 HOUSTON, TX 77024			ARANI, TAGHI T	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/595,804	Applicant(s) HANNAH ET AL.	
	Examiner Taghi T. Arani	Art Unit 2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 31 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 11-15 and 18-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-15 and 18-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Taghi T. Arani
Primary Examiner
Art Unit 2131
3/24/06

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-15, 17-26 were pending.

Claims 6-10 and 17 are cancelled.

Claims 27-33 are added.

Claims 1, 12, 18, 19 and 26 are amended.

Claims 1-5, 11-15, and 18-33 have been examined and are pending.

Response to arguments

2. This Office action is responsive to Applicant's arguments filed on 1/31/2006.

Applicant's arguments with respect to claims 1-5, 11-15, and 18-33 have been considered but are moot in view of the new ground (s) of rejection.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18 is rejected under 35 U.S.C.101 because the claims are directed to a non-statutory subject matter.

The Federal Circuit has recently applied the practical application test in determining whether the claimed subject matter is statutory under 35 U.S.C. 101. The practical application test requires that a "useful, concrete, and tangible result" be accomplished. An "abstract idea" when practically applied is eligible for a patent. As a consequence, an invention, which is eligible for patenting under 35 U.S.C. 101, is in the "useful arts" when it is a machine,

Art Unit: 2131

manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The test for practical application is thus to determine whether the claimed invention produces a useful, concrete and tangible results.

Claim 18 directed to a television receiver comprising:

a video detector to separate a received television signal into audio and video components;

a device coupled to said video detector to remove a graphics overlay from added to a frame of an analog video signal obtained from the received television signal;

an analog-to-digital converter coupled to receive an said audio signal obtained from the received television signal;

a decryption stage coupled to said analog-to-digital converter; and

a demodulator coupled to said decryption stage to demodulate a carrier .

There is no showing in the claim that the claim is for “practical application” and what , if any , the final result is. Merely separating video signal , removing graphical overlay from analog video signal and decrypting audio signal , and a demodulator to demodulate a carrier without actually outputting and or /storing the demodulated carrier does not meet the statutory requirement of 35 U.S.C. 101. Furthermore , the claimed demodulator coupled to the decryption stage is to demodulate a carrier. It is not clear which carrier and how the produced demodulated carrier is related to other elements (i.e . related to analog video signal) of the television receiver . For an invention to be useful it must satisfy the utility requirement of section 101. The utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. MPEP2107 and Fisher, 421 F.3rd, 76 USPQ2d at 1230.

Art Unit: 2131

Therefore, claim 18 is not for practical application that produces a useful result and are rejected under this section.

Dependent claims 19-27 inherit the deficiencies of the independent claims 8 and 11 and are rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record McAdam et al. (US Patent, 4,964,162, hereinafter "McAdam") and US patent 5,228,082 to Yanagidaria et al. (hereinafter "Yanagidaria"), and further in view of US patent 5,355,410 to Charton et al. (hereinafter "Charton")

As per claims 12, McAdam teaches a television transmitter comprising:

- a graphics pattern generator to provide a graphics pattern [to add] to a frame of an analog video signal to form an obscured video signal (column 7, line 14 through column 8 line 11, see figure 1, VIDEO ENCODER 22);
- an analog-to-digital converter coupled to receive an analog audio signal (figure 8, A/D CONVERTER 160);
- a digital encryption stage coupled to said analog-to-digital converter to generate a digital audio signal (figure 8, ENCRYPTOR 162); and

Art Unit: 2131

- a modulator coupled to said stage to generate a modulated audio signal (figure 8, SQPR MODULATOR 170).

- a broadcaster to transmit the obscured signal and the modulated audio signal (column 15, lines 37-57).

While McAdam teaches scrambling of a video line or a video line segment to form an obscured video signal, McAdam does not teach (as persuasively argued by the applicant) a graphic pattern generator to provide a graphic pattern to add to a frame of analog video signal to form an obscured video signal, emphasis added by the examiner.

However, in an analogous art, Yanagidaria teaches a system for producing a jamming signal (i.e. a graphic pattern) to be inserted in a band of analog video signal to prevent nonsubscribers from poaching pay television programs (Abstract, col. 1, lines 59-63, Fig. 14 and associated text).

Therefor, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method/system of McAdam's scrambling of analog video signal with the teachings of Yanagidaria to generate graphic pattern (i.e. jamming signal) to provide a graphic pattern to add to a frame of analog video signal in contrast with scrambling /unscrambling taught by McAdam. One would be motivated to modify McAdam's system and method as such because it is feasible to employ an unscrambling device unknown to the broadcaster on the user's premises to unscramble the scrambled signals. Furthermore, supplying users with unscrambling devices generate a high cost which is passed to the users and possibly loss of revenue for the broadcaster, in addition to deterioration of the original signal caused by scrambling and unscrambling (see Charton, col. 1, lines 24-45).

As per claim 33, McAdam teaches the television transmitter of claim 12, wherein the modulator is to band limit the modulated audio signal (column 4, lines 26-29).

4. Claims 18, 30, 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record McAdam et al. (US Patent, 4,964,162, hereinafter "McAdam") and US patent 5,355,410 to Blais et al. (hereinafter "Blais") and further in view of US patent 5,355,410 to Charton et al. (hereinafter "Charton"),

As per claim 18, McAdam teaches a television receiver comprising:

- a video detector to separate a received television signal into audio and video components (column 16, line 5 through column 17, line 25, see also figure 12, AUDIO/VIDEO SEPARATOR);
- an digital-to-analog converter coupled to said audio signal (digitizing, column 19, line 21);
- a decryption stage coupled to said converter (figure 15, DECRYPTOR 310); and
- a demodulator coupled to said stage to demodulate a carrier (figure 15, SQPR DEMODULATOR 300).

While McAdam teaches a device coupled to said video detector to decode (unscramble) the scrambled received television signal (figure 12, VIDEO DECODER 222, see also column 4, lines 39-67), McAdam does not disclose a device to remove a graphic overlay added to a frame of an analog video signal.

However, Blais teaches filtering out (i.e. to remove) jamming signal (i.e. a graphic overlay) added to a frame of an analog video signal at the receiving end of TV signals (see col. 7, lines 45-67, see also Fig. 7 and associated text).

Therefor, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method/system of McAdam's (scrambling) unscrambling of analog video signal with the teachings of Blais to (generate) remove the graphic overlay added to a frame of analog video signal in contrast with scrambling /unscrambling taught by McAdam. One would be motivated to modify McAdam's system and method as such because it is feasible to employ an unscrambling device unknown to the broadcaster on the user's premises to unscramble the scrambled signals. Furthermore, supplying users with unscrambling devices generate a high cost which is passed to the users and possibly loss of revenue for the broadcaster, in addition to deterioration of the original signal caused by scrambling and unscrambling (see Charton, col. 1, lines 24-45).

As per claim 30, McAdam teaches the receiver of claim 18, further comprising a frame buffer coupled to the video detector to store the frame of the analog video signal (column 4, lines 47-49, compensated scrambled video signal is stored in a random access memory).

As per claim 31, McAdam teaches the receiver of claim 18, further comprising a software routine (column 4, line 40, video decoder) to receive a pattern identifier (column 4, lines 58-68, transform identifier) associated with the graphics overlay and to generate a complementary graphics overlay based on the pattern identifier (column 4, lines 63-68).

As per claim 32, McAdam teaches the receiver of claim 31, wherein the software routine is to add the complementary graphics overlay to the frame of the analog video signal (column 5, lines 1-13).

Art Unit: 2131

4. **Claims 1 and 28-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, McAdam et al. and further in view of prior art of record, Williams (USP 3,371,548).

As per claim 1, McAdam et al. teach a method of broadcasting television-programming including:

- generating an analog video signal (column 7, lines 19-21, see also column 7, lines 41-59);
- digitally encrypting an audio signal to provide a digitally encrypted audio signal (figure 8, A/D CONVERTER 160, ENCRYPTOR 162, see also column 4, Lines 19-39);
- modulating a carrier with said digitally encrypted audio signal and said analog video signal (column 15, lines 51-54); and
- broadcasting said audio and video signals (column 15, lines 40-41),

McAdam et al. fails to teach wherein said digitally encrypted audio signal is broadcast using a plurality of overlapping subcarriers and the video signal is broadcast using an accompanying subcarrier.

Williams teaches broadcasting digital data in the vertical banking interval of a television signal (broadcasting video signal using an accompanying subcarrier) using a plurality of overlapping subcarriers (column 2, line 44 through co. 3 line 18, see also abstract).

It would have been obvious to one of ordinary skill in the art to modify McAdam et al.'s method of broadcasting television programming with the teaching of Williams to broadcast the digitally encrypted audio signal using a plurality of subcarriers, because plurality of subcarriers

Art Unit: 2131

with lower frequencies can be transmitted with more immunity than single modulated higher frequency (Williams, column 2, lines 50-55).

As per claims 28 and 29, McAdam teaches the method of claim 11, further comprising encrypting a pattern identifier associated with the graphical overlay pattern and broadcasting the encrypted pattern identifier with the audio and video signals (column 5, lines 7-17, transform identifier encrypted and inserted into horizontal blanking interval of the scrambled video signal).

5. Claims 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over McAdam et al. and Williams as applied to claim 1 and further in view of and US patent 5,228,082 to Yanagidaria et al. (hereinafter "Yanagidaria"), and further in view of US patent 5,355,410 to Charton et al. (hereinafter "Charton")

Referring to claim 11, McAdam teaches the method of claim 1 wherein generating an analog video signal includes generating an analog video signal with a graphical overlay pattern (column 7, line 14 through column 8 line 11, see also figure 1, VIDEO ENCODER 22).

While McAdam teaches scrambling of a video line or a video line segment to form an obscured video signal, McAdam does not teach (as persuasively argued by the applicant) generating an analog video signal includes generating an analog video signal with a graphical overlay pattern.

However, in an analogous art, Yanagidaria teaches a system for producing a jamming signal (i.e. a graphical overlay pattern) to be inserted in a band of analog video signal to prevent nonsubscribers from poaching pay television programs (Abstract, col. 1, lines 59-63, Fig. 14 and associated text).

Therefor, it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method/system of McAdam's scrambling of analog video signal with the teachings of Yanagidaria to generate graphic pattern (i.e. jamming signal) to provide a graphic pattern to add to a frame of analog video signal in contrast with scrambling /unscrambling taught by McAdam. One would be motivated to modify McAdam's system and method as such because it is feasible to employ an unscrambling device unknown to the broadcaster on the user's premises to unscramble the scrambled signals. Furthermore, supplying users with unscrambling devices generate a high cost which is passed to the users and possibly loss of revenue for the broadcaster, in addition to deterioration of the original signal caused by scrambling and unscrambling (see Charton, col. 1, lines 24-45).

6. **Claims 2-5, 13-15 and 19-27** are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art of record, McAdam and Williams as applied to claims 1, McAdam, Yanagidaria and Charton as applied to claim 12, and McAdam, Blais and Charton as applied to claim 18 above and in view of prior art of record, Chouly et al (USP 5,416,801, hereinafter "Chouly"), and in the alternative, Williams (USP 3,371,548).

As per claims 2, 13, and 19, McAdam as modified fails to teach wherein modulating/demodulating a carrier with said digitally encrypted audio signal includes using orthogonal frequency division multiplexing to form symbols.

However, Chouly et al. (Williams) do disclose modulating a carrier with said digitally encrypted audio signal includes using orthogonal frequency division multiplexing to form symbols (Chouly et al. column 3, lines 46-47, see also Williams column 2, lines 36-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly et al.'s (Williams') teaching of using orthogonal frequency division multiplexing to the system/method of McAdam as modified, such that the multiplexer of the modified McAdam utilizes orthogonal frequency division multiplexing. One would have been motivated to modify the modified McAdam's system/method as such in order to provide for a high level of protection because of the complexity of the orthogonal frequency division multiplex transmission technique.

As per claims 3, 14, and 20, McAdam as modified fails to teach using an inverse Fourier transform to convert a frequency domain signal back to the time domain and a Fourier transform unit coupled to said demodulator.

However, Chouly (Williams) do disclose the method/apparatus of claim 2 and 13 respectively, including using an inverse Fourier transform to convert a frequency domain signal back to the time domain and a Fourier transform unit coupled to said demodulator (Chouly et al. column 4, lines 52 - 541, see also, Williams, column 2, lines 36-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly 's (Williams') teaching of an inverse Fourier transform and a Fourier transform to the system/method of McAdam as modified, such that modified McAdam's system would be include an inverse Fourier transformer, coupled to the modulator and the digital to analog converter on the transmitter side and a Fourier transform coupled to the demodulator on the receiver side. One would have been motivated to modify the modified McAdam 's system/method as such in order to generate the orthogonal frequency division-multiplexing signal of the frame.

As per claim 21, McAdam teaches the receiver of claim 20 including an analog-to-digital converter coupled to said Fourier transform unit (figure 15, D/A 314, 316).

As per claim 4, McAdam as modified fails to teach providing a guard interval with an orthogonal frequency division multiplexing symbol.

However, Chouly discloses the method of claim 3 including providing a guard interval with an orthogonal frequency division multiplexing symbol (column 9, line 61 and 65).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly 's teaching of using a guard interval with an orthogonal frequency division multiplexing symbol to the system/method of McAdam as modified, such that the multiplexer of the modified McAdam utilizes orthogonal frequency division multiplexing with a guard interval. One would have been motivated to modify the modified McAdam 's system/method as such in order to absorb the echoes produced by multi-path channels.

Referring to claims 5 and 24, McAdam as modified fails to teach providing said guard interval as a cyclic prefix and wherein the modulator is adapted to insert a cyclic prefix onto symbols of said modulated audio signal.

However, Chouly-Williams teach providing said guard interval as a cyclic prefix onto symbols of said modulated audio signal (column 11, lines 15-16 to Chouly and column 3, lines 32-35, fig. 7 of Williams).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly 's teaching of providing said guard interval as a cyclic prefix to the system/method of McAdam as modified, such that the multiplexer of McAdam as modified utilizes a cyclic guard interval. One would have been motivated to modify the modified

Art Unit: 2131

McAdam's system/method as such in order to provide for absorption of echoes due to multi-path channels (Williams, column 3, lines 32-35).

As per claim 15, McAdam teaches the transmitter of claim 14 including a digital-to-analog converter coupled to said unit (figure 9, D/A CONVERTER 212).

As per claim 27, McAdam as modified does not teach but Chouly and Williams teach the receiver of claim 18, wherein the demodulator is to demodulate the carrier using a cyclic prefix as a guard interval (column 11, lines 15-16 to Chouly and column 3, lines 32-35, fig. 7 of Williams).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Chouly 's (Williams') teachings of providing cyclic prefix as a guard interval to the system/method of McAdam as modified, such that the demodulator of McAdam as modified utilizes a cyclic guard interval. One would have been motivated to modify the modified McAdam 's system/method as such in order to provide for absorption of echoes due to multi-path channels (Williams, column 3, lines 32-35).

As per claims 22-23 and 25-26, Chouly 's (Williams') cyclic prefix (i.e. guard interval) inherently comprises a portion of a transmitted/received symbol (i.e. an OFDM symbol), and that said portion inherently comprises a tail of said transmitted symbol (see for example, column 8, lines 40-60. and fig. 7 of Williams I, see also, column 9 lines 30 through column 11, line 20 column 11, lines 14-19 of Chouly et al).

Conclusion

Prior arts made of record, not relied upon:

US 4,318,125 to Shutterly

Art Unit: 2131

US 4,215,366 to Davidson

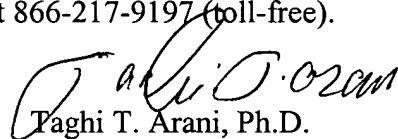
US 4,081,832 to Sherman

US 3,885,089 to Callais et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taghi T. Arani whose telephone number is (571) 272-3787. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Taghi T. Arani, Ph.D.
Primary Examiner
Art Unit 2131